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Published in:
Ethnicity and Health

DOI:
10.1080/13557858.2017.1357067

Publication date:
2019

Document Version
Peer reviewed version

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Journal:	*Ethnicity and Health*
Manuscript ID	CETH-2015-0256.R2
Manuscript Type:	Original Manuscript
Keywords:	HIV/AIDS, Prevention strategies, meta-sythesis, Southern Africa, marriage

This is an Accepted Manuscript of an article published by Taylor & Francis in *Ethnicity and Health* on 27 July 2017, available online: http://www.tandfonline.com/10.1080/13557858.2017.1357067.

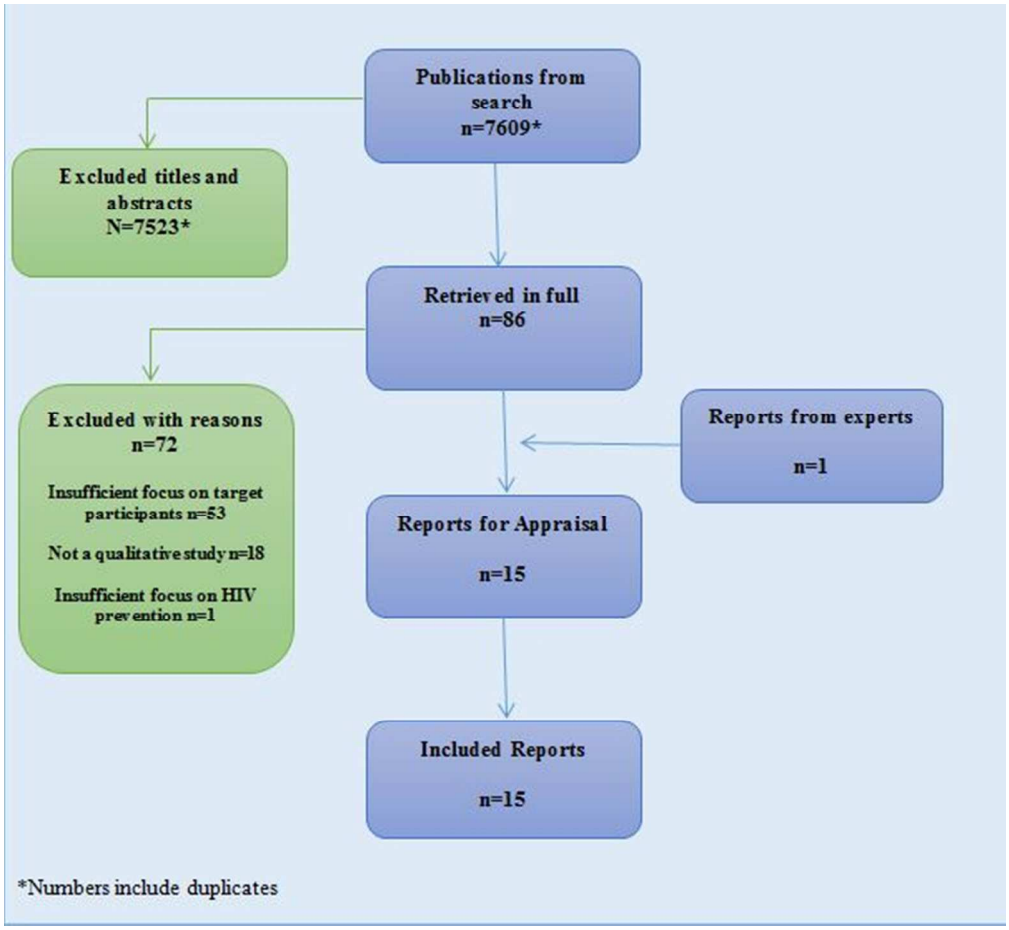

Figure 1: Search Results

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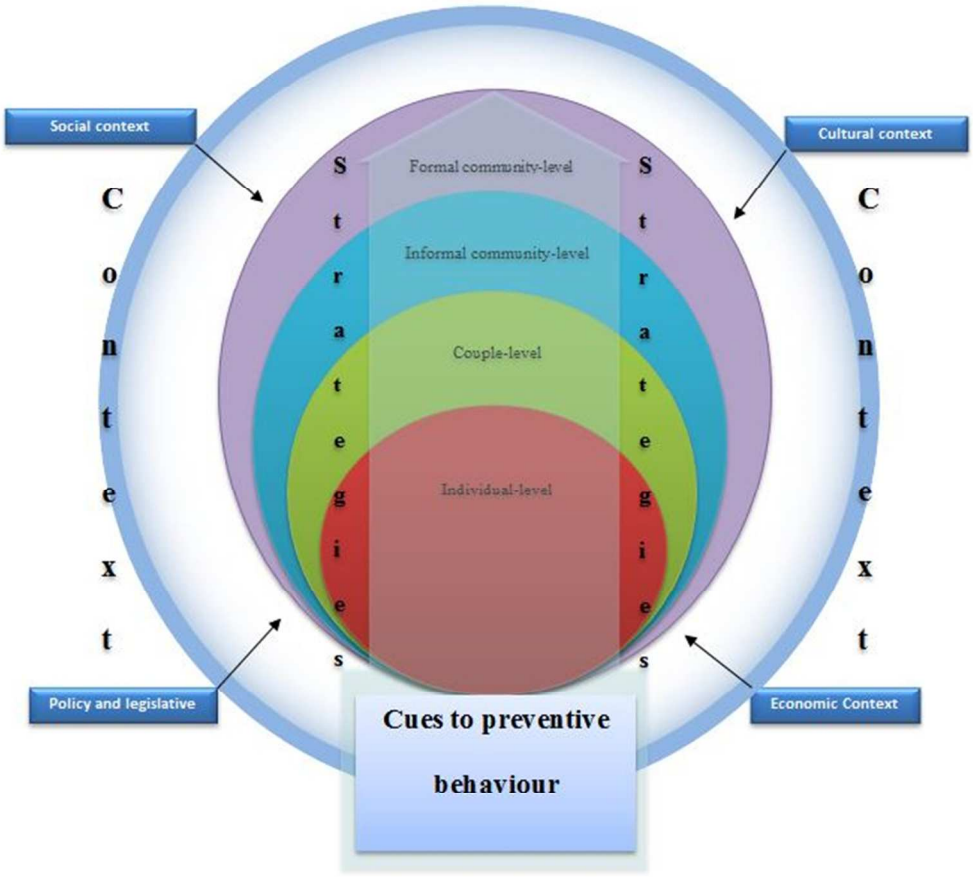

Figure 2: Conceptual model experiences of married Southern African women in protecting themselves from HIV/AIDS

177x160mm (96 x 96 DPI)

Understanding the experiences of married Southern African women in protecting themselves from HIV/AIDS: a systematic review and meta-synthesis

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Abstract

Background

Whilst marriage has been repeatedly identified in the literature as an HIV risk factor amongst Southern African women, not much is known about women's perception of their role, experiences and strategies used to address HIV risks in the context of a marriage.

Aims

The aim of the study was to synthesise perceptions, experiences and strategies of married Southern African women in the prevention of HIV.

Methods

A systematic review of qualitative studies was conducted. Three electronic databases (Medline, Cinahl and PsycINFO) were systematically searched to identify relevant literature. The meta-synthesis process followed Sandelowski and Barroso's (2007) recommendations.

Results

Of 7 609 papers, 15 were included in the review. The quality of the included studies was variable. In the final synthesis stage, three broad analytic themes emerged: contextual background, cues to preventive behaviour, and HIV prevention strategies.

Implications

Findings were used to develop a conceptual framework for studying HIV/AIDS prevention experiences of married Southern African women.

Keywords: HIV/AIDS; Prevention strategies, meta-synthesis; Southern Africa, marriage

Introduction

Recent evidence suggests that most new cases of HIV infection in the Southern African region occur within stable heterosexual unions (UNAIDS 2010, Shubber et al 2014). A study carried out in two countries namely Zambia and Rwanda, for example, found that around 60% to 94% of all new heterosexually acquired infections occurred within marriages and among cohabitating couples (Dunkle et al 2008). Vulnerability of marriages to HIV infection appears to be fuelled by three main factors: high numbers of discordant partnerships (partnerships, in which one partner is HIV positive whilst the other one is HIV negative); low rates of condom use; and high levels of culturally accepted sexual infidelity amongst married men (Clark et al 2004, Bongaarts 2007, De Walque 2007, Hageman et al 2010, UNAIDS 2010).

Although husbands and wives are at risk of contracting HIV from their spouse within a marriage, it is women who face an elevated risk of transmission from their husbands (Anglewicz et al 2010). Besides being biologically more susceptible to HIV infections, a number of socio-cultural gender inequalities also come into play and leave women particularly vulnerable. For example, the existence of culturally prescribed gender roles that advocate male dominance and female submission can deny women the ability to negotiate safe sex with their husbands (Clark et al 2004, Bongaarts 2007, Hageman et al 2010). Furthermore, whilst female fidelity is strictly expected, it is acceptable and also common for men to have extramarital sex (Smith 2007, Mungwini 2008, Anglewicz et al 2010).

Failure to adequately understand HIV prevention issues faced by married women poses risks such that preventive interventions may not meet the specific needs

of this population. This in turn may lead to increased adverse outcomes across a wide range of domains including: HIV transmission rates (including mother-to-child transmissions); health and social care cost; morbidity; mortality; and caretaker burden (UNAIDS 2010). Consequently, a better understanding of the experiences of women from the Southern African countries is needed with regard to their specific risks and strategies that they employ to prevent becoming HIV infected.

To date, the only available systematic review evidence regarding HIV in the context of marriage in the Southern African region is limited to quantitative studies that examine the type and extent of risk factors for HIV positive status among married women (Clark 2004, Bongaarts 2007, Eyawo et al 2010, Magadi and Desta 2011 and Pullum and Staveteig 2013). While this information is of great relevance to aid understanding of the scale of transmission risk, quantitative evidence alone does not provide an in-depth understanding of how these risk factors increase women's vulnerability, how risks are perceived and experienced and how they are modulated by a number of contextual factors.

Thus the aim of this review was to gather evidence about the experiences with and adopted strategies of Southern African women in relation to HIV prevention in the context of a marriage. Specifically, it sought to answer three review questions: (1) What are the experiences (both positive and negative) of married Southern African women with regard to protecting themselves from HIV infection? (2) What do married women in the Southern African region say about their perceived roles in protecting themselves from HIV infection? And (3) What strategies do they employ to overcome the challenges that they are experiencing?

Method

We conducted a systematic review and meta-synthesis of qualitative studies drawing upon methods proposed by Sandelowski and Barroso (2007) and Thomas and Harden (2008). The approach starts by adopting Sandelowski and Barroso's (2007) methods of conducting a review of qualitative studies which includes searching and retrieving of qualitative research reports, screening of articles and appraisal of included studies, but it differs in the way it synthesises study findings.

Meta-synthesis

Meta-synthesis is a form of secondary research that has been growing rapidly over the past decade (Walsh and Downe 2005, Barnett-Page and Thomas 2009 and Tong et al 2012,). It involves a process of combining evidence from individual qualitative studies to create a new understanding (Higgins and Green 2008) and has been defined as an integrative method for extracting concepts, and comparing, contrasting and reciprocally translating themes across studies (Saini and Shlonsky 2012). Such interpretive integration of qualitative findings is in itself the result of an interpretive synthesis of primary data (Sandelowski and Barroso 2007).

Search strategy

A highly sensitive search strategy, consisting of terms pertinent to: 'Sexual behaviour'; 'HIV'; and, 'qualitative research', was developed and then run during June 2014 in three indexing databases: MEDLINE, CINAHL and PsycINFO. (see Appendix 1, Search strategies). We mapped terms to existing subject headings in each database and used keyword searching with and without truncation. Unpublished and ongoing

studies were searched via direct contact with experts that TK and MR knew of, key authors to included publications, and via website searching of key organisations such as joint United Nations Programme on HIV/AIDS (UNAIDS), World Health Organisation (WHO), AVERT and Southern African AIDS Trust (SAT). Furthermore, the reference lists and bibliographies of all retrieved publications were hand searched.

Inclusion criteria and screening process

The inclusion criteria for the articles consisted of all of the following: *Sample* - 1) The majority (>50% of sample) of study participants had to be married women, 2) The majority of study participants (>50% of sample) had to be from Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, South Africa, Zambia or Zimbabwe); *Topic* – HIV Prevention; *Design*: qualitative studies of any kind; and English Language publication with an abstract. A full inclusion and exclusion criterion is available from lead author.

Studies were excluded if they consisted of any of the following: non-research based first-hand narrative accounts; studies mainly including single women; studies mainly including health care workers (or other professional groups); studies mainly including men.

Retrieved records were exported to Refworks [SM], online reference management software that facilitates simple storage and organisation of the records into folders. A two-stage approach to screening all retrieved records was adopted: Stage one - screening of titles and abstracts; Stage two – screening of full texts. Two reviewers [TTE, TK] independently screened all records by title and abstract before meeting to

discuss and agree selection. Full texts were then obtained and again independently scrutinised by two reviewers [TTE, TK] to confirm inclusion or exclusion. Discrepancies not resolved by the two reviewers were subject to a consensus decision reached after consultation with the rest of the team.

Quality appraisal

All included publications were subject to a global assessment of study quality drawing upon CASP (2006) and COREQ (Tong et al 2007) criteria: triangulation of data, rigour, reflexivity, credibility, relevance, clear exposition of ethical issues, and methods of data collection and analysis. The nature and 'typology' of the qualitative evidence was also assessed and reported (Sandelowski and Barroso 2003).

Data synthesis

A Thematic Synthesis approach, as described by Thomas and Harden (2008) was followed in order to identify, interpret and explain the reported themes in primary studies. The aim was to achieve analytical abstraction in addition to identifying and developing themes (Barnett-Page and Thomas 2009). This method draws on other established methods namely, meta-ethnography (Noblit and Hare 1988) and grounded theory (Glasser and Strauss 2009). Consequently, Thematic Synthesis involves three steps that overlap to a certain extent: free line-by-line coding**,** development of descriptive themes, and development of analytical themes.

To manage analysis and strengthen analytic rigour and transparency, eligible publications were imported for thematic coding synthesis and abstraction into the

qualitative software package NVIVO 10. TTE performed all three stages of the synthesis (coding, developing descriptive themes and developing analytic themes) whilst TK was involved in discussions at every stage of the process. SM and MR contributed to the refinement of analytical themes.

Results

Publication characteristics

The search identified 7609 titles and abstracts of which 86 were deemed to meet inclusion criteria and were retrieved in full (Figure 1). Following scrutiny of the full text, 72 were excluded leaving a total of 14 publications that met the inclusion criteria; one additional study was included following contact with experts. The review therefore included 15 publications reporting on 10 studies where an average of approximately 60% of the total samples was married women (see Table 1 for characteristics and methods of the included studies).

[Insert figure 1 here]

[Insert Table 1 here]

All included publications were published between 2000 and 2013 (n=15). Most of the publications were authored by academics with a public health background (n=8). Of the ten Southern African countries that were targeted in the searches, only four countries (Malawi, Mozambique, South Africa and Zimbabwe) were represented in the included reports.

CASP and COREQ revealed shortcomings in the quality of the included studies (see tables 2, 3 & 4). These included sparse details on mutual influences on data by the

relationship between researchers and participants; lack of discussion of ethical considerations and information on the credibility and robustness of the data analysis. Eight studies were classified as thematic descriptions.

[Insert tables 2, 3 & 4 here]

Principal themes

Initially **86** free codes were identified. In the second stage, one reviewer (TTE) looked for similarities and difference between the initial codes in order to group them into a hierarchical order. Codes were merged based on shared meanings of initial codes to generate descriptive themes. These were subsequently discussed and agreed among the authors. Table 5 displays the hierarchical organisation of the **21** descriptive themes. As for the next step, descriptive themes were collapsed into nine higher-order conceptual themes. In the final synthesis stage, **three broad interlinked analytic themes** emerged: cues to preventive behaviour, HIV prevention strategies, and contextual background. These are conveyed visually in a conceptual model (see figure 2 for the conceptual model), which illustrates that cues to preventive behaviour influenced women's decisions to take up various HIV prevention strategies, and that the success of these prevention strategies was in turn influenced by the contextual background. The contextual background also influenced cues to preventive behaviour thereby forming a full cycle of experiences and strategies to HIV prevention for married women in the Southern African Region.

[Insert table 5 here]

Cues to preventive behaviour

'*Cues to preventive behaviour'* reflects what motivated married women to adopt or try and adopt preventive behaviour. Such cues included knowledge about HIV. The women's sources of information encompassed media awareness campaigns (television, radio and newspapers), leaflets, posters and bill boards, drama clubs, research studies, church based activities, and pre- and antenatal classes (Kesby 2000, Chirwa et al 2011, Shamu et al 2012). Other cues were linked to social factors such as watching friends and families suffering and dying from AIDS. These experiences in particular produced anxieties and prompted measures to preserve their health and wellbeing (Chirwa et al 2011). Also, seeing orphaned children of their late friends and family members made them think about their own children and led them to seek HIV prevention (Schatz et al 2005, Chimbiri 2007, Bandali 2011, Chirwa et al 2011, Kacanek et al 2012). Sadly, for some women, it took the illness and death of their spouses or children to realise that their own risk of becoming HIV infected was substantial and to take up preventive measures (Chirwa et al 2011, Mkandawire-Valhmu et al 2013).

[Insert figure 2 here]

HIV prevention strategies

The prevention strategies that the women employed varied depending on whom they enlisted or involved in the process and so four strategy levels were identified: individual-level strategies, couple-level strategies, informal level strategies, and formal community level strategies.

Individual-level strategies

Some married women acted independently and used approaches that did not require help or co-operation of other people (*Individual-level strategies).* Such strategies included maintaining fidelity and individual HIV testing (Chimbiri 2007, Fox et al 2007, Bandali 2011, Chirwa et al 2011, Shamu et al 2012, Mkandawire-Valhmu et al 2013). The main aim in these individual-level strategies appeared to be protecting oneself rather than the couple. Consequently, some women purposefully avoided having sex with their husbands and therefore opted to end their marriage when they felt unsafe (Bandali 2011, Chirwa et al 2011, Mkandawire-Valhmu et al 2013).

Couple-level strategies

Couple-level strategies were those approaches whereby the women involved their husbands and sought their co-operation in protecting the couple and family against HIV. In all of the reports that were included (n=15), for example, women stressed the importance of the couples' ability to communicate openly about HIV and it's prevention. Other couple-level strategies included couple's HIV testing and the regular use of male or female condoms (Muhwava 2004, Buck et al 2005, Schatz et al 2005, Chimbiri 2007, Bandali 2011, Chirwa et al 2011, Kacanek et al 2012, Montgomery et al 2012, Shamu et al 2012). Some women resorted to keeping up with their traditional role as 'ideal' wives as strategies in order to keep their husbands from having extramarital relationships. These strategies included keeping the house clean and also cooking meals to ensure that their husbands were well fed and would therefore not seek another woman to do these chores for him (Kesby 2000). In that same line, women attempted to ensure their husband's fidelity by giving them as much sex as possible so

that the husbands were sexually satisfied at all times and would therefore refrain from seeking sexual gratification elsewhere (Schatz et al 2005, Shamu et al 2012).

Informal community-level strategies

There was a great sense of community unity providing *Informal community-level strategies* in relation to HIV prevention as the women sought and made use of support structures like family and friends, religious leaders, and traditional marriage counsellors. Firstly, where a husband was having extramarital relations, married women consulted members of the family who fulfilled the important traditional role of being marriage consultants. Such traditional marriage consultants included aunties, uncles or elderly family friends who would confront the husbands on their behalf (Kesby 2000, Schatz et al 2005, Bandali 2011, Chirwa et al 2011). Also, women attended social gatherings like 'kitchen parties', marriage initiation events whereby newly married women were given marital advice by more experienced women. These offered opportunities for women to share their experiences and discuss strategies in relation to marital sex, including HIV prevention (Shamu et al 2012). Reluctance to confront their unfaithful husbands in person also meant that some married women resorted to physically and/or verbally confronting the extramarital partners of their husbands instead (Schatz et al 2005).

Formal community-level

As far as the *Formal community-level* strategies are concerned, women enlisted the help of doctors, nurses and midwives. It appears that where married women utilised formal support structures, they had not attended clinics or hospitals with the intention of seeking support in HIV prevention. Rather, they received this information as a by-

product of the health issues they actually intended to resolve. For example, women were educated about HIV when they were seeking treatment for other sexually transmitted diseases like syphilis and gonorrhoea (Kesby 2000). In some cases, HIV awareness was raised by midwives when women attended the clinics and hospital for pre- and antennal classes (Bandali 2011, Chirwa et al 2011, Shamu et al 2012). Once women had gained awareness of HIV, they frequently requested that their doctors, nurses and midwives talk to their husbands on their behalf (Kesby 2000). Thus, rather than educating their husbands themselves, HIV education was provided by health care professionals who were seen as more credible in their role as experts.

Context factors affecting the use of strategies

This review found contextual factors that impacted greatly on the nature, appropriateness and effectiveness of strategies and therefore influenced choices amongst married women in this regard. Factors included cultural context, social context, economic context, and policy and legislative context.

Cultural context: Culturally prescribed marriage norms

Culturally prescribed marriage norms were those where husbands were expected to be the 'head of the house' and therefore the decision maker whilst women were expected to be submissive to their husbands in all marital matters. This meant that women could not confront and reprimand their husbands for any risk behaviour directly (Bandali 2011, Chirwa et al 2011, Shamu et al 2012). Also, there was no expectation that marital sex had to be negotiated. Only husbands would be in the position to initiate which left no room for women to raise or negotiate prevention strategies (Kesby 2000, Bandali 2011, Chirwa et al 2011). Together with the culturally accepted and frequently

practiced polygamy or multi-partnership for men, this made it difficult for some women to insist on or ensure their husband's fidelity (Kesby 2000, Schatz et al 2005, Mkandawire-Valhmu et al 2013).

Social context

In terms of *Social context,* some married women's choices of HIV strategies were determined by their experiences of domestic abuse. For example, some women reported that bringing a condom home resulted in physical violence towards these women (Muhwava 2004, Chimbiri 2007, Kang et al 2007, Sahin-Hodoglugil et al 2009, Kacanek et al 2012, Montgomery et al 2012). This is because condoms were considered by husbands to be inappropriate for marriage but rather a method that is only to be utilised by prostitutes (Muhwava 2004, Chimbiri 2007). Also, where women confronted their husbands about extramarital affairs, women reported being beaten and subjected to other forms of abuse including being repeatedly accused of infidelity, being forced to have sex, being sexually neglected, and /or financial abuse such as preventing access to household funds (Fox et al 2007, Shamu et al 2012). Consequently, some married women chose to forgo any prevention strategies even where it was apparent to them that they were being placed at high risk of HIV infection by their husbands (Chimbiri 2007, Fox et al 2007).

Economic context

The *Economic context* impacted greatly on the availability, feasibility and choice of strategies and also the acceptance of these strategies by the women's husbands. Women who had employment and therefore were financially independent were more able to initiate and negotiate safe sex with their husbands and their husband tended to accept

and co-operate with them (Schatz et al 2005, Bandali 2011, Chirwa et al 2011, Montgomery et al 2012). Married women who were economically dependent on their husbands, however, were more likely to choose not to leave their husband as doing so would mean losing their financial security (Fox et al 2007, Bandali 2011, Chirwa et al 2011 and Montgomery et al 2012). Consequently, women tended to avoid strategies that they felt would push their husbands into leaving them but instead, economically dependent women tended to employ strategies whereby their husband's co-operation was not required.(Fox et al 2007, Kang et al 2007, Sahin-Hodoglugil et al 2009, Chirwa et al 2011, Sahin-Hodoglugil et al 2011, Kacanek et al 2012, Montgomery et al 2012, Mkandawire-Valhmu et al 2013).

Policy and legislative context

As far as the *Policy and legislative context* was concerned, married women's attempts to prevent HIV infection were hindered by a lack and/or weaknesses of relevant national policies, laws and law enforcement**.** As such, some married women hoped for a wide range of changes in policy and legislation which included: tougher punishment for rape/forced sex that extended to marriages, tougher punishment for knowingly/intentionally infecting other persons with HIV, making it illegal for a husband to have more than one wife, and ensuring that these laws were indeed implemented (Kesby 2000, Schatz et al 2005, Chimbiri 2007, Fox et al 2007). As for policy level interventions, these women hoped for government initiatives that were more gender sensitive and also offered more informative and educational support (Kesby 2000)

Discussion

This review found that certain socio-culturally prescribed marriage norms in Southern Africa hinder women's autonomy in sexual decision-making and hence contribute to their powerlessness in the initiation of HIV preventive strategies. Married women tended to lack authority to make decisions about their own sexual needs and behaviours in an attempt to abide by the culturally prescribed identity of what an ideal wife should be: a woman who is 'naïve' and passive and therefore submissive to her husband's decisions and demands, most especially when it comes to sexual demands. This finding is similar to observations made by Ramjee and Daniels (2013) in their literature review of factors that increase women's vulnerability to HIV acquisition. According to Ramjee and Daniels (2013), women are expected to respect their husbands, accept polygamous relationships and fulfil family and community tasks. Similarly, Mungwini (2008) observed that culture in Zimbabwe identifies an ideal wife to be one who is loyal and submissive to her husband and kin, altruistic, tolerant, forgiving, simple, industrious and unflinchingly hospitable.

The review also found that for married women, uptake of HIV prevention strategies tended to be hindered by forms and practices of domestic abuse that were not challenged and seen as entirely acceptable and common within Southern African marriages. This confirms Shamu et al's (2011) findings of their systematic review and meta-analysis of 19 African studies which revealed that the prevalence of intimate partner violence (IPV) against women was 57%, hence IPV is very much a part of married women's reality. Li et al's (2014) systematic review and meta-analysis of 28 multi-country studies that included African countries not only found evidence of intimate partner violence but also found that any type of IPV was significantly associated with HIV infections among women.

This review further revealed that any attempt by married women to be assertive in their efforts to prevent HIV was stifled by their financial dependency on their husbands. For example, women avoided reprimanding their husbands for their high risk behaviour associated with unprotected sex with other women and failed to initiate safe sex strategies due to fear of destitution and poverty should the marriage be ended by their husbands. Thus not having economic independence and being poor increased women's vulnerability to HIV infection. This is contrary to Fox (2010) and also Mishra et al (2007) who both found that wealthier men and women in Africa, those cohabiting included, are at greater risk of HIV infection than poorer men and women. Mishra et al (2007) reached their conclusion following a review of data from national surveys on married couple's wealth in eight sub-Saharan African countries that included Malawi and Lesotho. Fox (2010) reviewed demographic and health survey data from 13 African countries including Lesotho, Zimbabwe and Malawi.

Most primary studies on HIV prevention within marriage have focused on condom use only (Adetunji 2000, Ali et al 2004, Maharaj and Cleland 2005, Collegari et al 2008 and Maharj et al 2012). These studies appear to highlight the use of the condom as the only HIV prevention strategy for married people. This review however draws attention to additional strategies that married women employ. These additional strategies include communication between the partners and with health professionals about HIV infection risks, couple's HIV testing and counselling, termination of marriages where there is high risk of promiscuity and the use of informal support structures. Further insight and in-depth understanding of these additional strategies is imperative, especially as condom use within marriage may be considered culturally

inappropriate and therefore remains low in this socio-cultural context (Adetunji 2000 and Maharaj and Cleland 2005).

Strengths and Limitations

This meta-synthesis of 15 studies is the first attempt to synthesise qualitative studies on experiences of and strategiesfor HIV prevention for married southern African women. The findings of this review are particularly valuable to health professionals and policy makers in this area of study in that they can inform practice and decision making in providing services that are tailored to this group of women.

There are however a number of limitations that should be taken into consideration. Firstly, it is important to note that of the ten Southern African countries that were included in the search, qualitative studies had only been conducted in four countries (Malawi, Mozambique, South Africa and Zimbabwe). Whilst there is a common ground in relation to many socio-cultural context factors, Southern African countries are highly diverse in terms of economic, social and health policies and national legislation. Nevertheless, this study provides a basis on which future empirical studies on HIV prevention amongst married southern African women may be based.

Secondly, whilst in this meta-synthesis the focus was only on women who are currently married, evidence for this review was retrieved from mixed samples that included a wide range of other populations including men (never married, married divorced and widowed) and unmarried women (never married, divorced and widowed). Furthermore, some of the studies that were included were mixed-method studies that

used both qualitative and quantitative methods. Although efforts were made to include findings related only to married women and derived from qualitative data, there are some instances where it was less clear which data shaped the author's interpretation.

Implications for research

This study suggests that the socio-cultural and economic background impacts greatly on HIV prevention amongst married women in the Southern African region. We need more focused research at each level, not just individual level to understand how strategies can be developed and supported for couples at risk of HIV/AIDS. Further, this review has focused on the experiences of women but we also need further interdisciplinary research on the dynamics involved in interactions, behaviours and relationships between partners within diverse social and cultural settings of Southern Africa.

Implications for policy and practice

There is a need for interventions and policies that are couple-orientated at all stages of the conceptual model. Besides knowing about HIV, women need to know that couples can be discordant, meaning that women's HIV status does not necessarily reflect their husbands' status and vice versa; hence the urgency for couples' counselling and testing. Also in regard to HIV knowledge, couples need to be made aware of the options that are available should couples be found to be discordant, including support with disclosure, positive prevention whereby the positive partner is commenced on anti-HIV medication immediately to minimise the risk of exposing the uninfected partner to HIV, pre-exposure prophylaxis treatment (an anti-viral drug therapy that is given to the

partner who is HIV negative where a couple wants to conceive), and post-exposure prophylaxis treatment (an antiviral drug therapy that is given to the partner who is HIV negative were they might have been exposed).

The review has highlighted that women engage in a number of intervention strategies. It is important that health practitioners have a good understanding of barriers and facilitators for women to enact these strategies. A single strategy (e.g. advocating condom use without considering the context) may in most cases not be sufficient, and a tailored battery of approaches may be required. While it is tempting to endorse uniform approaches to prevention, the review has also highlighted the contextual factors that operate at an individual, couple and socio-cultural level, which render a 'one size fit al' approach questionable and potentially ineffective. There is a need to develop 'sensitive couple-centred diagnostics' in order to facilitate multi-level, comprehensive strategies.

At a social policy level, there is a need for initiatives and campaigns that impact on the socio-cultural norms that currently fuel married women's vulnerability to HIV infection as a result of their relative powerlessness and disadvantaged social position. Women's economic dependency on their husbands might be eradicated through providing them with job opportunities or funding to start their own businesses. Gender roles that exclude men from antenatal and maternity classes might be eradicated through allowing husbands to be present during antenatal classes and also childbirth. This would allow husband access to the same HIV campaigns that women access when they are pregnant. Thus midwives and other care givers should encourage women to invite their husbands to such classes.

Conclusion

In this review of qualitative studies, a conceptual model was developed to highlight the experiences and strategies of married women in the Southern African region. The model shows that women employ various multi-levels prevention strategies (individual level, couple level, informal level and formal level) and that their choices of prevention strategies are greatly influenced by number of contextual factors, factors that are namely cultural, social, policy and legislative, and economic contexts in which the women use strategies. This therefore means that for this particular group of women, interventions ought to be multi-level and multi-faceted in order to effectively meet their needs. Besides interventions, the conceptual model may also be used to guide future studies in this field.

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Appendix 1

Database: Ovid MEDLINE(R) <1946 to February Week 4 2012>	
1	((attitude/ or cluster sampl$.mp. or constant comparative method.mp. or content analysis.mp. or discourse analysis.mp. or ethnographic research.mp. or ethnological research.mp. or ethnonursing research.mp. or exp patients attitudes/) and perceptions/) or exp Attitude/ or exp Research Methods/ or field stud$.mp. or focus group$.mp. or Focus Groups/ or life experience$.mp. or nursing methodology research.mp. or Nursing Methodology Research/ or observational method$.mp. or phenomenological research.mp. or phenomenology.mp. or phenomenology/ or purposive sample.mp. or Qualitative Research/ or qualitative stud$.mp. or qualitative validity.mp. or questionnaire/ or Questionnaires/ or theoretical sampl$.mp. or ethnonursing.af. or ethnograph$.mp. or phenomenol$.af. or life stor$.mp. or women$ stor$.mp. or (emic or etic or hermeneutic$ or heuristic$ or semiotic$).af. or participant observ$.tw. or (social construct$ or postmodern$ or post-structural$ or post structural$ or poststructural$ or post modern$ or post-modern$ or feminis$ or interpret$).mp. or (action research or cooperative inquir$ or co operative inquir$ or co-operative inquir$).mp. or (humanistic or existential or experiential or paradigm$).mp. or (field stud$ or field research).tw. or human science.tw. or biographical method.tw. or qualitative validity.af. or theoretical sampl$.af. or focus group$.af. or (account or accounts or unstructured or open-ended or open ended or text$ or narrative$).mp. or life-world.mp. or life world.mp. or conversation analys?s.mp. or personal experience$.mp. or theoretical saturation.mp. or lived experience$.tw. or life experience$.mp. or cluster sampl$.mp. or theme$.mp. or thematic.mp. or categor$.mp. or observational method$.af. or questionnaire$.mp. or content analysis.af. or thematic analysis.af. or constant compare$.af. or narrative analys?s.af. (1321706)
2	exp Sex Education/ (7402)
3	coitus/ or extramarital relations/ or safe sex/ or sexual abstinence/ or unsafe sex/ (10538)
4	condom.mp. [mp=title, abstract, original title, name of substance word, subject heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier] (9024)
5	"Sexual Partners"/ (7725)
6	*"Safe Sex"/ (722)
7	*"Extramarital Relations"/ (223)
8	"Contraception Behavior"/ (5595)
9	exp Condoms, Female/ or exp Condoms/ (6855)
10	sexual intercourse.mp. or exp Coitus/ (10552)
11	exp Unsafe Sex/ (1970)
12	exp Sexual Behavior/ (69524)
13	2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 (86153)
14	HIV Infections/ (122399)
15	1 and 13 and 14 (6184)
16	limit 15 to (abstracts and english language) (5285)

Database: EBSCO - PSYCinfo and CINAHL		
#	**Query**	**Results**
S10	S1 and S4 and S8	780
S9	S1 and S4 and S8	1332
S8	S5 or S6 or S7	35089
S7	(MH "Safe Sex") OR (MH "Unsafe Sex")	2583
S6	.(MH "Female Condoms") OR (MH "Condoms+")	4446
S5	MM "Safe Sex" OR DE "Psychosexual Behavior" OR DE "Condoms" OR DE "Sex Education" OR DE "Sexual Intercourse (Human)" OR DE "Sexual Risk Taking"	33644
S4	S2 or S3	71335
S3	.(MH "HIV Infections+") OR (MH "Sexually Transmitted Diseases, Viral+")	50376
S2	MM "HIV" OR MM "AIDS Prevention"	20971
S1	MH qualitative studies+ or MH ethnographic research+ or MH phenomenological research+ or MH ethnonursing research+ or MH grounded theory+ or MH qualitative validity+ or MH purposive sample+ or MH observational methods+ or MH content analysis+ or MH thematic analysis+ or MH constant comparative method+ or MH field studies+ or MH theoretical sample+ or MH discourse analysis+ or MH focus groups+ or MH phenomenology+ or MH ethnography+ or MH ethnological research+ or TX qualitative or TX ethno$ or TX phenomeno$ or TX grounded theor$ or TX constant compar$ or TX purpos$ sampl$ or TX focus group$ or TX data saturat$ or TX participant observ$ or TX field stud$ or TX lived experience$ or TX narrative analysis	Display

Table 1: Characteristics and Methods of the Included Studies

First Author	Year	Disciplinary Affiliation	Country	Design	Sampling and sample	Data Collection Method	Type of findings
Kesby	2000	Geography	Zimbabwe	No explicit methodological orientation	Purposive sampling. Participants: 20 women (80% were married)	FGDs	Topical survey
Muhwava	2004	Population Studies	Zimbabwe	No explicit methodological orientation	Sub-sample of quantitative study. Participants: men and women. All married. Proportions not stated-appears to be 50% each	FGDs	Thematic description
Buck[1]	2005	Medicine	Zimbabwe	No explicit methodological orientation	Sub-sample of quantitative study. Participants: 81 women, 96% were married.	FGDs and IDIs	Thematic survey
Schatz[2]	2005	Behavioural Science	Malawi	No explicit methodological orientation	Sub-sample of quantitative study. Participants: 50 ever married women (41 currently married) and 41 husbands	IDIs	Thematic description
Kang[1]	2007	Public Health	Zimbabwe	No explicit methodological orientation	Sub-sample of quantitative study. Participants: 69 women (96% were married) plus 34 male partners	FGDs and IDIs	Topical survey
Chimbiri[2]	2007	Medicine	Malawi	No explicit methodological orientation	Sub-sample of quantitative study. Participants: men and women. All married. Proportions not stated-appears to be 50% each	IDIs	Thematic description
Fox	2007	Not Stated	South Africa	No explicit methodological orientation	Purposive sampling: Participants: All women, 10 out 18 are married.	IDIs	Thematic description
Sahin-Hodoglugil[3]	2009	Public Health	South Africa and Zimbabwe	Modified Grounded Theory	Sub-sample of quantitative study. Participants: 105 women (51% were married) plus 37 male partners	FGDs and IDIs	Thematic description
Chirwa	2011	Nursing	Malawi	No explicit methodological orientation	Purposive Sampling. Participants: 30 married couples (30 women).	IDIs	Thematic survey
Bandali	2011	Public Health	Mozambique	No explicit methodological orientation	Sub-sample of a larger qualitative study. Participants: 40 men and 40 women, All married.	FGDs and IDIs	Thematic description

sahin-Hodoglugil[3]	2011	Public Health	South Africa and Zimbabwe	None explicitly stated: Grounded Theory references	Sub-sample of quantitative study. Participants: 105 women (51% were married) plus 37 male partners	FGDs and IDIs	Thematic description
Kacanek[3]	2012	Public Health	South Africa and Zimbabwe	No explicit methodological orientation	Sub-sample of quantitative study. Participants: 206 women (51% were married) plus 41 male partners	FGDs and IDIs	Topical Survey
Montgomery[3]	2012	Public Health	Zimbabwe	No explicit methodological orientation	Sub-sample of quantitative study. Participants: 81 women (98% were married) plus 27 male partners	FGDs and IDIs	Thematic description
Shamu	2012	Public Health	Zimbabwe	No explicit methodological orientation	Purposive sampling. Participants: 64 women (most currently married) and 7 key informants.	FGDs	Topical Survey
Mkandawire-Valhmu	2013	Anthropology	Malawi	Post-colonial feminist framework	Purposive sampling. Participants: 72 women (56% currently married).	FGDs	Topical Survey

Focus Group Discussions (FGD) and in-depth interviews (IDI). 15 papers whereby average is approximately 60% of the total samples are married women.

[1]Centre for Disease control and Prevention (CDC) and Contraception Research and Development (CONRAD) Program Study

[2]Malawi Diffusion and Ideational Change Project (MDICP) Study

[3]Methods for Improving Reproductive Health in Africa (MIRA) Study

Table 2: COREQ Quality assessment results

Items included in 15 reports: Research team and reflexivity domain

Item	Bandali et al 2011	Buck et al 2005	Chimbiri et al 2007	Chirwa et al 2011	Fox et al 2007	Kacanek et al 2012	Kang et al 2007	Kesby et al 2000	Mkandawire-Valhmu et al 2013	Mont gomery et al 2012	Muhwawa 2004	Sahin-Hodoglugil et al 2009	Sahin-Hodoglugil et al 2011	Schatz et al 2005	Shamu et al 2012
Personal Characteristics															
Interviewer/facilitator	●	●	●	●	●	●	●	●		●		●	●		●
Credentials															
Occupation	●				●	●									●
Gender	●		●	●											
Experience and training	●	●			●	●	●			●		●	●		●
Relationship with participants															
Relationship established		●				●	●			●		●	●	●	
Participant knowledge of the interviewer		●				●	●	●		●		●	●	●	
Interviewer characteristics							●	●		●	●			●	

●=present

Items included in 15 reports: Study design domain

Item	Bandali et al 2011	Buck et al 2005	Chimbiri et al 2007	Chirwa et al 2011	Fox et al 2007	Kacanek et al 2012	Kang et al 2007	Kesby et al 2000	Mkandawire-Valhmu et al 2013	Mont gomery et al 2012	Muhwawa 2004	Sahin-Hodoglugil et al 2009	Sahin-Hodoglugil et al 2011	Schatz et al 2005	Shamu et al 2012
Theoretical framework															
Methodological orientation						●			●			●	●		
Participants selection															
Sampling	●	●	●	●	●	●	●		●	●		●	●	●	
Method of approach	●	●			●	●	●	●	●	●		●	●		
Sample size	●	●	●	●	●	●	●	●	●	●		●	●	●	●
Non-participation		●										●	●		
Setting															
Setting for data collection				●				●	●				●		●
Presence of Non-participants															
Description of sample	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Data Collection															
Interview guide		●	●	●	●	●	●	●	●	●		●	●		●
Repeat interviews	●														
Audio/visual recording	●	●	●	●	●	●	●		●	●		●	●		●
Field notes				●				●	●						●
Duration				●	●	●									●
Data saturation				●						●					
Transcripts returned															

●=present

Items included in 15 reports: Analysis and findings domain

Item	Bandali et al 2011	Buck et al 2005	Chimbiri et al 2007	Chirwa et al 2011	Fox et al 2007	Kacanek et al 2012	Kang et al 2007	Kesby et al 2000	Mkandawire-Valhmu et al 2013	Mont gomery et al 2012	Muhwawa 2004	Sahin-Hodoglugil et al 2009	Sahin-Hodoglugil et al 2011	Schatz et al 2005	Shamu et al 2012
Data analysis															
Number of data coders		●	●	●	●	●	●		●	●		●	●		
Description of the coding	●		●		●	●	●			●		●	●		●
Derivation of themes	●	●		●	●	●	●		●	●		●	●		●
Software		●		●		●			●	●		●	●		●
Participant checking															
Reporting															
Quotations presented	●	●	●	●	●	●	●		●	●	●	●	●	●	●
Data and findings consistent	y	y	y	y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Clarity of major themes	y	y	y	y	Y	Y	Y	y	Y	Y	y	Y	Y	Y	Y
Clarity of minor themes	y	y	N/A	y	y	y	N/A	N/A	N/A	y	N/A	N/A	N/A	N/A	Y

●=present, y=yes, n=no, N/A = not applicable

Table 3: CASP Quality assessment results

REPORT	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7	Question 8	Question 9	Question 10
1. Bandali (2011)	yes	yes	yes	no	yes	no	yes	yes	yes	Valuable
2. Buck et al (2005)	yes	yes	yes	yes	yes	yes	no	no	yes	Valuable
3. Chimbiri (2007)	yes	yes	yes	no	Can't tell	no	no	Can't tell	yes	Valuable
4. Chirwa et al (2011)	yes	yes	yes	yes	yes	yes	yes	yes	yes	Valuable
5. Fox et al (2007)	yes	yes	yes	yes	yes	no	no	no	yes	Valuable
6. Kacanek et al (2007)	yes	yes	yes	yes	yes	yes	yes	can't tell	yes	Valuable
7. Kang et al (2007)	yes	yes	yes	yes	yes	yes	yes	yes	yes	Valuable
8. Kesby (2000)	yes	yes	can't tell	can't tell	yes	yes	no	no	yes	Valuable
9. Montgomery et al (2012)	yes	yes	yes	yes	yes	no	no	yes	yes	Valuable
10. Muhwava (2005)	yes	yes	no	can't tell	no	no	no	no	yes	Valuable
11. Mkandawire-Valhu et al (2014)	yes	yes	yes	can't tell	yes	yes	can't tell	can't tell	yes	Valuable
12. Sahin-Hodoglugil et al (2009)	yes	yes	yes	yes	yes	no	yes	can't tell	yes	Valuable
13. sahin-Hodoglugil et al (2011)	yes	yes	yes	yes	yes	no	yes	can't tell	yes	Valuable
14. Shamu et al (2012)	yes	yes	yes	yes	yes	no	yes	can't tell	yes	Valuable
15. Schatz (2005)	can't tell	yes	yes	yes	yes	no	no	can't tell	yes	Valuable

Table 4: Justification for exclusion based on full text screening results

Justification for exclusion	Details	No. Papers
Not Qualitative	Quantitative	14
	Literature based	4
Insufficient focus on HIV Prevention	Living with HIV	1
Insufficient focus on target subject	Marital status not mentioned	22
	Marital status mentioned but proportions of married women were not stated	6
	Married women are less than 50%	9
	Most married women are from outside the Southern African region	1
	Focused on other populations than married women (e.g. men only, youths, students)	4
	Key informants used	11
Total		72

Table 5: Development of themes

I. CONTEXTUAL BACKGROUND

A. CULTURAL CONTEXT
- 1. MARITAL SEX
  - a. decisions on condom use rest the husband
  - b. desire to have children = no condom use
  - c. husband is responsible for initiating sex
  - d. marital sex not negotiated
  - e. sex is based on husband's preferences
  - f. women responsible for contraception and HIV prevention
- 2. POLYGYMY
  - a. men allowed more than one wife in our culture
  - b. Seeking next wife = ensuring husband's infidelity was not possible
- 3. TRADITIONAL GENDER ROLES
  - a. wife role is to meet husbands expectations
  - b. assigned duties - men expected to be basic providers
  - c. assigned duties - wife expected to be care giver only
  - d. community norms = gendered roles = abuse and vulnerability
  - e. husband is the head of household = husband make all decisions
  - f. husband's infidelity is accepted
  - g. women's fidelity is expected

B. ECONOMIC CONTEXT
- 1. ABILITY TO EARN INCOME
  - a. financial dependency = endure risky marriage
  - b. financial dependency = forgo condom discussion
  - c. poverty = Women had extramarital affairs for economic support
  - d. working women = end risky marriage
  - e. working women challenged risky gender roles
  - f. working women more inclined to discuss condom use in marriage

C. POLICY AND LEGISLATION CONTEXT
- 1. HOPES
  - a. desire = break the silence about abuse
  - b. Desire for abolishment of polygamy and widow inheritance
  - c. Desire for more government interventions
  - d. Desire for more information on HIV statistics
  - e. Desire for tougher punishments on rape
  - f. Desire to end forced sex

D. SOCIAL CONTEXT
- 1. ALCOHOL INTAKE
  - a. drunken husbands =coercive sex
  - b. husband's alcohol drinking = no room to negotiate safe sex
  - c. husband's drinking of alcohol = husband's risk behaviour
  - d. negotiating safe sex = abuse
  - e. women's substance abuse = high risk
- 2. DOMESTIC ABUSE
  - a. coercive sex is common within marriage
  - b. Community norms = non-disclosure of abuse
  - c. Domestic Abuse - increased HIV risk
  - d. Domestic Abuse = sexual submission
  - e. Domestic Abuse inhibit risk reduction efforts
  - f. forms of domestic abuse= financial, physical, sexual, emotional
  - g. husband hitting his wife common and accepted
  - h. Husband's drinking of alcohol = coercive sex

II. CUES TO PREVENTITIVE BEHAVIOUR

A. PROMPTING FACTORS
- 1. CHILD WELFARE
  - a. child's illness or death
  - b. fear of infecting unborn baby in pregnancy
  - c. fear of leaving children as orphans
- 2. HIV PREVENTION AWARENESS
  - a. awareness of husband positive status = preventative action
  - b. awareness of husband's risky behaviour = preventative action
  - c. awareness of risk factors = preventative action
  - d. risk perception = preventative action
  - e. source of information =NGOs, church, hospital, newspapers, media, village meetings
  - f. seeing people suffering from HIV
  - g. spousal illness or death = HIV test

III. STRATEGIES TO HIV PREVENTION

A. FORMAL -LEVEL STRATEGIES
- 1. CONSULTING MEDICAL STAFF
  - a. women asked experts to educate their husbands
  - b. women sought information and treatment from medical staff

B. HUSBAND-LEVEL STRATEGIES
- 1. CONDOM USE
  - a. condom use = women's approval
  - b. condoms are for extramarital affairs
  - c. condoms have stigma - mistrust, admission of having affair
  - d. condoms not appropriate for marriage
  - e. condoms use - unpopular with some women
  - f. desire to have children = no condom use
  - g. discordant status = condom use
  - h. husband refuse condom use in marriage
  - i. suspecting husband's infidelity = request condom
- 2. CONFRONT HUSBAND
  - a. being sick = ask husband if he is having affair
  - b. husband's infidelity = confront husband
- 3. FOLLOW HUSBAND
  - a. suspect husband's infidelity = follow him to confirm infidelity
  - b. husband's alcohol intake = follow him husband to ensure his fidelity
- 4. HIV PREVENTION COMMUNICATION
  - a. women talked with their husbands about HIV and HIV prevention
  - b. fear of reprisal = women avoid communication
  - c. talking about HIV = conflict
- 5. HIV TESTING
  - a. antenatal clinic = HIV test
  - b. assumption of having same status = husband refuse his own HIV test
  - c. HIV test done together with husband
  - d. spousal illness= HIV test

C. INDIVIDUAL-LEVEL STRATEGIES
- 1. END RISKY MARRIAGES
  - a. women divorced unfaithful husband
  - b. family members tended to pressure women to stay in marriage
  - c. family support divorce
- 2. MAINTAINING FIDELITY
  - a. some women had extramarital relationships for sexual favours
  - b. women aware that being faithful only works if husband is also faithful
  - c. women remained faithful to minimise risk
- 3. REFUSING RISKY SEX
  - a. women refused sex where husband's infidelity was confirmed or suspected
  - b. women's refusal of sex = conflict

D. INFORMAL -LEVEL STRATEGIES
- 1. CONFRONT HUSBAND'S GIRLFRIENDS
  - a. Women confronted their husband's girlfriend so the girlfriend would end the affair
  - b. Easier for women to confront other women rather than confronting their husbands
- 2. CONSULTING FAMILY AND FRIENDS
  - a. recruiting help and advice from friends and family
  - b. women attended social events for sexual advice
- 3. CONSULTING TRADITIONAL CONSULTANTS
  - a. traditional healers
  - b. traditional marriage counsellors=uncles and aunties with this role